Plan of Work
5. PLAN OF WORK

The study was planned to evaluate phytochemical and pharmacological effects of *Benincasa hispida* fruit as shown in the following manner.

(A) Conceptual study

It consists of detailed conceptual study regarding the plant *Benincasa hispida* (Thunb.) Cogn. with its literature review compiled from various floras, a detailed botanical description and its medicinal uses.

(B) Pharmacognostical study

This includes the macroscopic and microscopic study of the fruit of the plant, besides the study of dried fruit powder characters. Their transverse section descriptions are also included.

(C) Phytochemical study (Analytical study)

This deals with the modern pharmaceutical analysis of the *Benincasa hispida* fruit, including physiochemical characters, preliminary qualitative tests and chromatographic studies.

(D) Pharmacological study

*Benincasa hispida* fruit was screened for its effect on the different pharmacological activities. An attempt has been made to find out the mechanism of action of various activities investigated under the study.

Summary of the plan of work

1. To establish the correct identity of fruit of *Benincasa hispida* by authentication through morphological and microscopical studies.
2. To review the available literature regarding the plant.
3. Determination of quality control parameters such as ash values, extractive values, loss on drying, etc.
4. Evaluation of preliminary phytochemical testing.
5. Extraction, fractionation, and identification of the active constituents.
6. To determine the phytochemical profile of plant.
7. To study the pharmacological effects of the active extracts of fruit of *Benincasa hispida* on different experimental models relevant to its therapeutic application and comparison with respective standard drugs.
8. We have also made an attempt to find out the mechanism of action of various activities investigated viz. antioxidant, CNS, anti-ulcer, anti-inflammatory, anti-nociceptive and immunomodulatory activities.